

**Remarks/Arguments:**

Claims 1-8 are pending and rejected. Claim 1 has been amended. Claims 3 and 6-8 have been deleted. No new matter has been added.

On page 2, the Official Action rejects claims 1-2 and 4-5 under 35 U.S.C. §103(a) as being unpatentable over Nakamura (U.S. 2002/0021264) in view of Homma (U.S. 2001/0020923). It is respectfully submitted, however, that the claims are patentable over the art of record for at least the reasons set forth below.

Applicants' invention, as recited by claim 1, includes features which are neither disclosed nor suggested by the art of record, namely:

**... wherein, each of the initializing periods for performing the all-cell initializing operation has**

**a former half part, a latter half part, and an abnormal charge erasing part,**

**in the former half part, application of an ascending ramp waveform voltage to the scan electrodes causes a first initializing discharge using the scan electrodes as anodes and the sustain electrodes and data electrodes as cathodes,**

**in the latter half part, application of a descending ramp waveform voltage which is ranging from a voltage with the same polarity as the voltage applied during the former half part of initialization period of a voltage reverse in polarity thereto, to the scan electrodes causes a second initializing discharge using the scan electrodes as the cathodes and the sustain electrodes and data electrodes as the anodes, and**

**in an abnormal charge erasing part, applying a rectangular waveform voltage with same polarity as the voltage applied during the former half part, followed by applying a rectangular waveform voltage reverse in polarity as the voltage applied during the former half part, to the scan electrodes; and**

**wherein, in the initializing periods for performing the selective initializing operation, a descending ramp waveform voltage is applied to the scan electrodes, using the scan electrodes as cathodes and the sustain electrodes and data electrodes as anodes. (*Emphasis Added*)**

Claim 1 relates to waveforms which are applied to the scan electrodes for performing both all cell initializing and selective initializing operation. Specifically, during the all cell initializing operation, the initializing period includes a former half part, latter half part and abnormal charge erasing part. During these three different parts of the initializing period, distinct waveforms are applied to the scan electrodes (rectangular waveform is applied during the abnormal charge erasing part). Similarly, during the selective initializing operation, the initializing period includes a waveform applied to the scan electrodes. Support for these features can be at least found on pages 9 and 10 of Applicants' specification and furthermore shown in Fig. 4. No new matter has been added.

On page 3 of the Official Action, the Examiner cites paragraphs [0011]-[0020], [0061]-[0073] and Figs. 8-10 of Homma for suggesting a bipolar rectangular waveform applied to the scan electrodes during an abnormal charge erasing part. Furthermore, on page 11, the Examiner states that Homma's waveforms Ppr-s and Ppe-s are rectangular waveforms because Merriam-Webster dictionary defines rectangular as "*shaped like a rectangle.*" Applicants' representatives, however, respectfully disagree with the Examiner for at least two reasons.

The first reason why Applicants disagree with the Examiner is that one of ordinary skill in the art would define a rectangular waveform as alternating between two fixed values where the transition time between the values is negligible. For example, the *IEEE standard dictionary of electrical and electronic terms* defines a rectangular wave as "*a periodic wave which alternately assumes one of two fixed values, the time of transition being negligible in comparison with the duration of each fixed value.*" Furthermore, the McGraw-Hill dictionary of Scientific and Technical Terms defines rectangular wave as "*a periodic wave that alternately and suddenly changes from one to the other of two fixed values.*" Thus, based on the above definitions and the understanding of one of ordinary skill in the art, Homma's waveforms Ppr-s and Ppe-s as shown in Fig. 9 are not rectangular waveforms (they are ramp waveforms). Specifically, Homma's waveforms are clipped sawtooth waveforms (they do not suddenly transition from one fixed value to another fixed value (the ramp waveform gradually reaches the positive and negative voltages).

The second reason why Applicants disagree with the Examiner is that Homma does not disclose an abnormal charge erasing part. Specifically, Homma's waveform Ppr-s in Fig. 9 is applied to the electrodes during the former half part of the initializing period whereas Homma's waveform Ppe-s, is applied to the electrodes during the latter half part. Thus, Homma's ramp

waveforms Ppr-s and Ppe-s are not in an abnormal charge erasing part as recited in Applicants' claim 1.

Applicants' claim 1 is different than the art of record, because of the various waveforms applied to the electrodes during the all cell initializing operation and the selective initializing operation, and in particular the rectangular waveforms applied during the abnormal charge erasing part ("*... wherein, each of the initializing periods for performing the all-cell initializing operation has a former half part, a latter half part, and an abnormal charge erasing part, in the former half part, application of an ascending ramp waveform voltage to the scan electrodes causes a first initializing discharge using the scan electrodes as anodes and the sustain electrodes and data electrodes as cathodes, in the latter half part, application of a descending ramp waveform voltage which is ranging from a voltage with the same polarity as the voltage applied during the former half part of initialization period of a voltage reverse in polarity thereto, to the scan electrodes causes a second initializing discharge using the scan electrodes as the cathodes and the sustain electrodes and data electrodes as the anodes, and in an abnormal charge erasing part, applying a rectangular waveform voltage with same polarity as the voltage applied during the former half part, followed by applying a rectangular waveform voltage reverse in polarity as the voltage applied during the former half part, to the scan electrodes; and wherein, in the initializing periods for performing the selective initializing operation, a descending ramp waveform voltage is applied to the scan electrodes, using the scan electrodes as cathodes and the sustain electrodes and data electrodes as anodes*").

As shown in Applicants' Fig. 4, during the former half part, an ascending ramp waveform voltage is applied to the scan electrodes. During the latter half part, a descending ramp waveform is applied to the scan electrodes. Furthermore, in an abnormal charge erasing part, a bipolar rectangular waveform is applied to the scan electrodes. More specifically, first a rectangular waveform having the same polarity as the voltage applied during the former half part (i.e. positive polarity) is applied to the scan electrodes. Then, another rectangular waveform having a polarity the same as the voltage applied during the former half part (i.e. negative polarity) is applied to the scan electrodes. Thus, the abnormal charge erasing part includes a positive and negative rectangular waveform applied to the scan electrodes.

Furthermore, during the selective initializing operation, a descending ramp waveform is applied to the scan electrodes. For example, as shown in at least Fig. 4, a descending ramp

waveform in the initializing period of the selective initializing subfield decreases from voltage Vq to voltage Va.

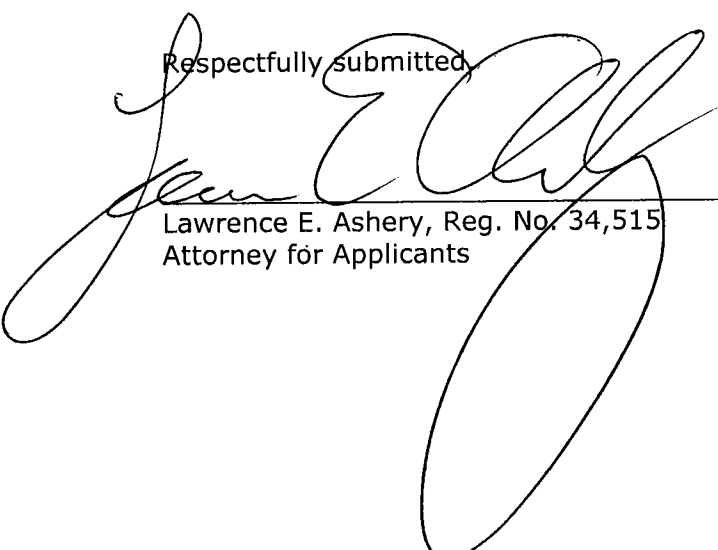
As stated by the Examiner on page 3 of the Official Action, Nakamura does not disclose the rectangular waveform voltage as recited in Applicants' claim 1. Thus, both Nakamura and Homma are deficient in suggesting Applicants' abnormal charge erasing part which includes the application of a bipolar rectangular waveform to the scan electrodes. Thus, claim 1 is patentable over the art of record for at least the reasons set forth above.

Dependent claims 2, 4 and 5 include all of the features of claim 1 from which they depend. Thus, claims 2, 4 and 5 are also patentable over the art of record for at least the reasons set forth above.

On page 4, the Official Action rejects claims 3 and 6-8 under 35 U.S.C. §103(a) as being unpatentable over Nakamura in view of Kim (U.S. 7,109,951) and further in view of Homma. The rejections of claims 3 and 6-8, however, are moot in view of their cancellation.

In view of the amendments and arguments set forth above, the above-identified application is in condition for allowance which action is respectfully requested.

Respectfully submitted,

  
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